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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/681,104	10/09/2003	Dong-Ryeol Ryu	45742	8105

7590 03/21/2007
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EXAMINER

TRINH, TAN H

ART UNIT	PAPER NUMBER
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2618

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/21/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/681,104

Applicant(s)

RYU ET AL.

Examiner

TAN TRINH

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 6, 11 and 16 is/are rejected.
- 7) ☒ Claim(s) 2-5, 7-10, 12-15 and 17-20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 6, 11 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Tran (U.S. Patent No. 6,269,075).

Regarding claim 1, Tran teaches an apparatus for processing multi-path signals in rake receiver (10) having respective fingers (16) are allocated with the multi-path signals received through different paths and demodulate the multi-path signals (94) allocated to the respective fingers (16) (see fig. 1), the apparatus (10) comprising: the fingers (16, 1-N), each receiving timing control (52) signals generated from other fingers (1-N) in order to track the allocated multi-path signals and tracking the multi-path signal allocated to the corresponding finger (20) by selecting any one of the timing control (52) signals of other fingers and an internal timing control signal (signal processing 64-70) in accordance with code tracker (88) selection signals (see fig. 1, col. 5, line 12 – col. 6, line 42); and a controller (52) for receiving the timing control signals (90) from the fingers (16) (see col. 6, lines 19-28), and outputting the code tracker (88) selection signals corresponding to the respective fingers (16, 1-N) in accordance with differences among time delays being tracked by the fingers allocated with adjacent path signals (see fig. 1, col. 7, lines 42-col. 8, lines 10). In this case, since the time delay is being tracking, on adjacent path signals 84 and 86 of the early or late by code tracker (88) and the threshold detector.

Regarding claim 6, Tran teaches a method of processing multi-path signals in rake receiver (10) having respective fingers (16) are allocated with the multi-path signals received through different paths and demodulate the multi-path signals (94) allocated to the respective fingers (16, 1-N), the method comprising the steps of: outputting code tracker (88) selection signals corresponding to the respective fingers (16) in accordance with differences among time delays being tracked by the fingers allocated with adjacent path signals (84 and 86) with reference to timing control (52) signals generated from the respective fingers (16) in order to track the allocated multi-path signals (see fig. 1, col. 7, lines 42-col. 8, lines 10); the respective finger (16) selecting any one of the timing control (52) signals of other fingers and an internal timing control signal (90) in accordance with the code tracker (88) selection signals (see fig. 1, col. 5, line 12 – col. 6, line 42); and tracking the path signal (82, 84 and 86) allocated to the corresponding finger using the selected timing control signal (see fig.1, col. 6, lines 19-41).

Regarding claims 11 and 16, Tran teaches an apparatus (10) for processing multi-path signals in rake receiver having respective fingers are allocated with the multi-path signals received through different paths and demodulate the multi-path signals allocated to the respective fingers (16, 1-N) (see fig. 1), the apparatus (10) comprising: a code tracker (88) for generating an internal timing control signal (90) for obtaining an optimum sample position from the allocated path signals 82, 84 and 86) (see fig. 1, col. 6, lines 19-28); a timing control signal selector (52) for receiving the internal timing control signal (90) from the code tracker (88) and the timing control signals (100) from other fingers (finger assignment 20) (see fig. 1, col. 6, lines 25-28 and

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lines 49-52), and selecting and outputting any one of the internal timing control signal (90) and the timing control signals (100) from other fingers in accordance with a time delay difference between the finger allocated with the path signal and the finger allocated with an adjacent path signal (see fig. 1, col. 7, lines 42-col. 8, lines 10); and a demodulator (92) for demodulating the allocated path signal (80 and 82) in accordance with the selected timing control signal (see fig. 1, 37).

Regarding claim 16, Tran teaches a method of processing multi-path signals in rake receiver having respective fingers are allocated with the multi-path signals received through different paths and demodulate the multi-path signals allocated to the respective fingers, the method comprising the steps of: generating an internal timing control signal for obtaining an optimum sample position from the allocated path signals; receiving the internal timing control signal and the timing control signals from other fingers, selecting and outputting any one of the internal timing control signal and the timing control signals from other fingers in accordance with a time delay difference between the finger allocated with the path signal and the finger allocated with an adjacent path signal; and demodulating the allocated path signal in accordance with the selected timing control signal.

Reasons for allowance

3. Claims 2-5, 7-10, 12-15 and 17-20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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Regarding dependent claims 2, 7, 12 and 17, Tran reference teaches an apparatus (10) for processing multi-path signals in rake receiver having respective fingers are allocated with the multi-path signals received through different paths and demodulate the multi-path signals allocated to the respective fingers (16, 1-N) (see fig. 1). However, Tran alone or in combination with other prior art of record, fail to disclose; the controller, *if the time delay differences among the plurality of fingers confirmed by the timing control signals of the plurality of fingers allocated with the adjacent path signals approach a predetermined minimum reference time delay difference, outputs the code tracker selection signal for selecting the timing control signal from the first finger having the largest path power among the plurality of fingers to the second finger*, as specified in dependent claims 2, 6, 11 and 16. (The dependent claims 3-5 are dependent to claim 2, the dependent claims 8-10 are dependent to claim 6, claims 12-15 are dependent to claim 11 and the dependent claims 17-20 are dependent to claim 16).

Conclusion

4. Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(571) 273-8300, (for Technology Center 2600 only)

Hand-delivered responses should be brought to the Customer Service Window (now located at the Randolph Building, 401 Dulany Street, Alexandria, VA 22314).

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5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tan Trinh whose telephone number is (571) 272-7888. The examiner can normally be reached on Monday-Friday from 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiners supervisor, Anderson, Matthew D., can be reached at (571) 272-4177.

The fax phone number for the organization where this application or proceeding is assigned is **(571) 273-8300**.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the **Technology Center 2600 Customer Service Office** whose telephone number is **(703) 306-0377**.

6. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tan H. Trinh
Division 2618
March 18, 2007

PATENT EXAMINER
TRINH, TAN

